

General

Title

Total knee replacement: average change between pre-operative and one year (9 to 15 months) post-operative health related quality of life as measured with the EQ-5D-5L.

Source(s)

MN Community Measurement. Data collection guide: total knee replacement (TKR): functional status and quality of life measures (01/01/2013 to 12/31/2013 dates of procedure). Minneapolis (MN): MN Community Measurement; 2015. 80 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Outcome

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess average change between pre-operative and one year (9 to 15 months) post-operative health related quality of life as measured with the EQ-5D-5L.

This health related quality of life measure will be reported as separate rates (stratified) for primary knee replacement and for revision knee replacement.

Rationale

Annually there are over 500,000 total knee replacement procedures performed in the United States (U.S.). It is projected that by 2030, the volume of this procedure will increase to over 3.48 million per year due to the aging baby-boomers, increased obesity and indications for total knee replacement that extend to both younger as well as older patients (Kurtz, 2006). From 2000 to 2006, the Medicare total knee replacement rate overall in the U.S. increased by 58%, from 5.5 to 8.7 per 1,000 (Centers for Disease

Control and Prevention [CDC], 2009). Total knee replacement revisions currently represent 8.2% of all Medicare dollars spent (Ong et al., 2006). During this same timeframe, total knee replacement rates in Minnesota regions increased from 7.2 to 8.6 per 1,000 to 10.8 to 12.9 per 1,000 (Fisher et al., 2010). It is estimated that annual hospital charges for total knee replacement will approach 40.8 billion dollars annually by 2015 (Kurtz et al., 2007).

For consumers, there is a lack of publicly reported information that would provide patients with an understanding of potentially how well they will function after having total knee replacement surgery. These measures will provide outcome data for patients that currently does not exist.

Evidence for Rationale

Centers for Disease Control and Prevention (CDC). Racial disparities in total knee replacement among Medicare enrollees--United States, 2000-2006. MMWR Morb Mortal Wkly Rep. 2009 Feb 20;58(6):133-8. [PubMed](#)

Fisher ES, Bell JE, Tomek IM, Esty AR, Goodman DC. Trends and regional variation in hip, knee, and shoulder replacement. Lebanon (NH): Dartmouth Institute for Health Policy and Clinical Practice, Robert Wood Johnson Foundation; 2010 Apr 6. 24 p.

Kurtz S. Future caseload. American Association of Orthopedic Surgeons Annual Meeting. 2006.

Kurtz SM, Ong KL, Schmier J, Mowat F, Saleh K, Dybvik E, Karrholm J, Garellick G, Havelin LI, Furnes O, Malchau H, Lau E. Future clinical and economic impact of revision total hip and knee arthroplasty. J Bone Joint Surg Am. 2007 Oct;89 Suppl 3:144-51. [PubMed](#)

MN Community Measurement. Data collection guide: total knee replacement (TKR): functional status and quality of life measures (01/01/2013 to 12/31/2013 dates of procedure). Minneapolis (MN): MN Community Measurement; 2015. 80 p.

Ong KL, Mowat FS, Chan N, Lau E, Halpern MT, Kurtz SM. Economic burden of revision hip and knee arthroplasty in Medicare enrollees. Clin Orthop Relat Res. 2006 May;446:22-8. [PubMed](#)

Primary Health Components

Total knee replacement (TKR); quality of life; EQ-5D-5L tool

Denominator Description

Patients who meet each of the following criteria are included in the population:

Patients age 18 years and older at the start of the procedure measurement period.

Patients who underwent a primary or revision total knee replacement with a procedure date between January 1 to December 31.

Patient had a certain Current Procedural Terminology (CPT) code.

See the related "Denominator Inclusions/Exclusion" field.

Numerator Description

The change between pre-operative and post-operative quality of life for patients undergoing a total knee replacement who have a completed EQ-5D specified health related quality of life tool obtained pre-

operatively and at one year (9 to 15 months) post-operatively (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

MN Community Measurement (MNCM) conducts validity testing to determine if quality measures truly measure what they are designed to measure, and conducts reliability testing to determine if measures yield stable, consistent results. Validity testing is done to see if the concept behind the measure reflects the quality of care that is provided to a patient and if the measure, as specified, accurately assesses the intended quality concept. Reliability testing is done to see if calculated performance scores are reproducible.

Evidence for Extent of Measure Testing

MN Community Measurement. Measure testing. [internet]. Minneapolis (MN): MN Community Measurement; [accessed 2015 Nov 12].

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Clinical Practice or Public Health Sites

Statement of Acceptable Minimum Sample Size

Does not apply to this measure

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

The measurement period (January 1 to December 31)

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Patient/Individual (Consumer) Characteristic

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

Patients who meet each of the following criteria are included in the population:

- Patients age 18 and older at the start of the procedure measurement period.

- Patients who underwent a primary or revision total knee replacement with a procedure date between January 1 to December 31.

- Patient had a certain Current Procedural Terminology (CPT) code. Refer to Tables 1 and 2 in the original measure documentation for CPT codes identifying primary and revision total knee replacement procedures.

Note:

Primary total knee replacement is the first total knee replacement for this particular knee joint.

Revision total knee replacement is the replacement of the previous failed total knee prosthesis with a new prosthesis. Some of the reasons for failure include wear, loosening, infection, fracture, instability, and patient related factors.

Patients with bilateral knee replacements (both knees replaced on the same day, during the same procedure) are included. This would be one procedure based record.

Patients with sequential knee replacements (each knee replaced on a separate day, during a separate procedure) are included. This patient would have two procedure based records, one for each procedure.

Exclusions

There are no exclusions.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

The change between pre-operative and post-operative quality of life for patients undergoing a total knee replacement who have a completed EQ-5D specified health related quality of life tool obtained pre-

operatively and at one year (9 to 15 months) post-operatively

Note: *EQ-5D-5L*: An assessment of current health state consisting of six questions asking the patient to describe in general (not related to their low back function) mobility, self-care, usual activities, pain/discomfort and anxiety/depression and a visual analog 100 point scale where patient rates current health state today.

Exclusions

Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Electronic health/medical record

Paper medical record

Type of Health State

Individually Reported Health State

Instruments Used and/or Associated with the Measure

- Total Knee Replacement 2015 Measure Flow Chart
- EQ-5D-5L

Computation of the Measure

Measure Specifies Disaggregation

Measure is disaggregated into categories based on different definitions of the denominator and/or numerator

Basis for Disaggregation

This health related quality of life measure will be reported as separate rates (stratified) for primary knee replacement and for revision knee replacement.

Scoring

Mean/Median

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Average change between pre-operative and one year (9 to 15 months) post-operative health related quality of life as measured with the EQ5D-5L.

Measure Collection Name

Total Knee Replacement

Submitter

MN Community Measurement - Health Care Quality Collaboration

Developer

MN Community Measurement - Health Care Quality Collaboration

Funding Source(s)

Unspecified

Composition of the Group that Developed the Measure

This total knee replacement measure was developed by a measure developer work group of key stakeholders in the community that included orthopedic surgeons, health plan representatives, and others.

Financial Disclosures/Other Potential Conflicts of Interest

Unspecified

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Jan

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

Measure Availability

Source available from the [MN Community Measurement Web site](#) .

For more information, contact MN Community Measurement at 3433 Broadway St. NE, Broadway Place East, Suite #455, Minneapolis, MN 55413; Phone: 612-455-2911; Web site: <http://mncm.org> ; E-mail: info@mncm.org.

Companion Documents

The following is available:

Snowden AM, Mlodzik R, Ghere E. 2014 health care quality report. Minneapolis (MN): MN Community Measurement; 2014 Dec. 335 p. This document is available from the [MN Community Measurement Web site](#) .

NQMC Status

This NQMC summary was completed by ECRI Institute on December 4, 2015. The information was verified by the measure developer on February 16, 2016.

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Production

Source(s)

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